ORIGINAL ARTICLE

Preparing Physicians for Careers in Primary Care Internal Medicine: 17 Years of Residency Experience

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Abstract. *The objective of this survey was to demonstrate whether a primary care track internal medicine residency program emphasizing community-based health care of the urban sick poor trains physicians who will continue to practice in general internal medicine or similar fields. Thirty-five primary care residents (100% of graduates) who trained from 1976 through 1993 in the Adult Primary Care Track of the Internal Medicine Residency Program at St. Vincent's Hospital, New York were used as participants.*

During the 1960s the federal government funded primary care programs for underserved rural and inner-city populations. Residency training opportunities in family medicine expanded substantially in the 1970s. The introduction of primary care tracks in internal medicine[1] and pediatrics[2] followed in the 1980s. Despite these efforts, however, serious concern has arisen regarding the number of physicians who have sought careers in primary care fields.[2–8]

As recently as 1983, 34% of US medical school graduates entered generalist residencies, defined as family practice, general medicine, and general pediatrics.[9] The low point was 14.6% in 1992. In the 1997 National Resident Matching Program 23.4% of

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US senior students selected family practice, medicine-pediatrics, and primary medicine or primary pediatrics programs.[10] In the 1997 match, 2,340 US graduates selected family practice residencies, compared with 1,398 in 1992. Also, from 1994 through 1997 there was an increase in the number of US senior students opting for programs in internal medicine, after 11 consecutive years of decline. Interest in pediatrics also grew, despite the negative view of primary care in many academic settings.[10]

One review of the long-term careers of Family Practice graduates reveals a high degree of persistence in remaining generalists.[11] Others, however, have noted a trend away from primary care commitment among trainees in family medicine, general medicine, or general pediatrics during their residencies.[2] There are programs in which up to 35% of residents changed to a specialty or subspecialty after the first year.[3] It has also been suggested that, although the raw numbers of US graduates who are trained to be generalists are adequate,[12,13] they are maldistributed.[12] One result is that an insufficient number of these physicians care for the inner-city poor and that most such services are instead provided by international medical graduate resident physicians.[14–17]

Perhaps the specifics of the residency significantly influence career choices of house officers. In this regard, we report here information provided through a survey by all 35 physicians who graduated from the primary care track residency program in internal medicine at St. Vincent's Hospital and Medical Center of New York from its start in 1977 through 1993.

The Residency Program in Primary Care Internal Medicine

St. Vincent's is an 813-bed tertiary care teaching hospital in New York City with substantial community medicine services and a primary care track residency, a separate program in the Department of Medicine that has had its own National Resident Matching Program number since 1991. All residents entering the Primary Care track interview specifically for this program. After accep-

tance, they are evaluated regularly and must meet the educational and clinical requirements of both the Medicine and Community Medicine Departments. We have used the term, "Primary Care," to distinguish this training experience from the characteristic inpatient-oriented residencies of recent decades. The Primary Care track is distinct from the traditional internal medicine training in that this program incorporates substantial resident experience in an extensive network of community-based settings.

The respondents had a median of 17 months of this experience, in addition to the continuity clinic, which they attend at least weekly throughout their training. Over the period studied, our surveyed residents engaged with their nurse and social-worker colleagues in long-term relationships with patients from surrounding areas of Manhattan in the primary care clinic; served as team members in homeless shelter clinics; and made three or more home visits in local neighborhoods to their frail, homebound aged patients each week. Most of these patients were impoverished minorities. Residents were also expected to carry out original studies, from conception to completion, during their residency years. Some examples of those studies include analyses of tuberculosis in the homeless,[18] alcohol use and abuse in the homebound elderly,[19] rates of measles immunity in adolescents,[20] and this present report.

Methods

The Adult Primary Care Track of the Internal Medicine Residency Program has included 18% of the medicine trainees; from 1977 through June of 1993 it graduated 35 residents. A written survey was mailed with one follow-up phone call by the authors, if needed, to each of these 35 former residents. All 35 surveys were completed and returned for an overall response rate of 100%. The survey was designed to determine the subsequent career choices of these graduates and what effect, if any, a primary care residency emphasizing community-based experiences with the poor had on their career choices.

TABLE I
PERSONAL DATA ABOUT RESIDENCY GRADUATES

Subject	*n* (%)
Total	35 (100)
Male	16 (46)
Female	19 (54)
Age range—current	33–51 years
US/Canadian medical school graduates	35 (100)
Ethnicity	
White	26 (74.29)
Latino	3 (8.57)
Asian/Asian-American	2 (5.71)
African-American	1 (2.86)
American Indian or Native Alaskan	1 (2.86)
Other or not reported	2 (5.71)

Results

Personal data about the resident graduates are shown in Table I. The age range of the respondents at the time of the survey was 33 to 51 years. Nineteen of the 35 (54%) are women. All 35 are graduates of US or Canadian medical schools.

All former residents were asked how certain they had been about wanting to practice primary care internal medicine when they began the residency program and also upon its completion (Table II). Thirty-one percent were very certain of their interest in primary care medicine at the start. On completion of the program this had increased to 60% ($P = 0.0001$).

Factors influencing the decision to practice or not practice primary care medicine are shown in Table III. Positive influencing

TABLE II
INFLUENCING FACTORS: CERTAINTY ABOUT WANTING TO PRACTICE PRIMARY CARE INTERNAL MEDICINE

Certainty	At beginning of residency *n* (%)	Upon completion of residency *n* (%)
Very certain	11 (31.43)	21 (60)*
Somewhat certain	14 (40)	8 (22.86)
Somewhat undecided	5 (14.29)	4 (11.43)
Very undecided	4 (11.43)	1 (2.86)
N/A	1 (2.86)	1 (2.86)

* $P = 0.0001$.

TABLE III
INFLUENCING FACTORS: DEGREE OF INFLUENCE OF EACH OF THE FOLLOWING FACTORS ON THE DECISION TO PRACTICE/NOT PRACTICE PRIMARY CARE INTERNAL MEDICINE

	Influence *n* (%)			
Factor	**Positive**	**No Influence**	**Negative**	**N/A**
Use of multidisciplinary team approach in patient care delivery	33 (94.29)	1 (2.86)	1 (2.86)	
Nature of primary care physician/patient relationship	32 (91.42)	1 (2.86)	2 (5.71)	
Training program consisting of broad-based and varied patient population	28 (80)	3 (8.57)	1 (2.86)	3 (8.57)
Presence of primary care internist role models	26 (74.29)	5 (14.29)	3 (8.57)	1 (2.86)
Academic curriculum and intellectual content of program	25 (71.43)	6 (17.14)	2 (5.71)	2 (5.71)
Lifestyle/autonomy as a primary care internist	15 (42.86)	9 (25.71)	11 (31.43)	
Presence of subspecialty internist role models	10 (28.54)	17 (48.57)	7 (20.0)	1 (2.86)
Prestige of being a primary care internist	4 (11.43)	22 (62.56)	8 (22.86)	1 (2.86)
Presence of outstanding loans/debts at end of residency training program	3 (8.57)	24 (68.57)	5 (14.29)	3 (8.57)
Level of anticipated income of future career choice	2 (5.71)	25 (71.43)	7 (20.0)	1 (2.86)

factors cited by the respondents included the use of the multidisciplinary team approach in patient care (94%), the nature of the physician-patient relationship as nurtured in this training program (91%), access to a broad-based and varied patient population (80%), the presence of primary care internist role models (74%), and the academic curriculum/intellectual content of the primary care internal medicine residency program at St. Vincent's (71%). The level of anticipated income among the possible future career choices had no influence in the majority of those surveyed. Lastly, the prestige of being a primary care internist had no influence in 62% of those surveyed.

The effect of the training program can be grasped by noting the current practices of the 35 graduates. Thirty-one (89%) of the graduates are working in primary care settings. Of these, 13 are in academic/hospital-based ambulatory care positions; 7 in general internal medicine private practice; 4 in community-based ambulatory care clinics; 2 in gerontology-programs and 5 in other fields

TABLE IV
PATIENT POPULATION IN CURRENT PRACTICES OF 34 PHYSICIANS*

Ten percent or more of professional time spent with these populations	Number of physicians who responded to the question
	n (%)
Geriatric	29 (83)
Homebound	14 (40)
Homeless	15 (43)
Indigent/poor	23 (66)
Substance abusers	19 (54)
HIV/AIDS	18 (51)
Culturally/socially isolated	17 (49)

* One former resident with no direct patient care responsibilities.

related to their primary care background. Three of the graduates pursued subspecialty careers (cardiology, immunology, dermatology), and 1 is working in Emergency Room Medicine. Most continue to spend time with various underserved patient populations similar to those they cared for as resident physicians during their training (Table IV).

We did not conduct a concurrent analysis of graduates of this hospital's traditional internal medicine training program.

Discussion

Less than 24% of US medical school graduates selected generalist training programs in 1997, even though there were ample numbers of positions available.[21] Thus it is clear that increasing the number of positions in such residencies is not a sufficient solution to the possible shortfall of primary care physicians. We suggest that more attention be directed to revision of graduate medical education curricula, with the intent of making such training more attractive.[2,3,5,22,23]

Changes should include a strong emphasis on community-based experience; programs in which attending physician team members who work at community service sites have a significant function as faculty; a clinical base incorporating a large and varied population; opportunity for learning in local private practitioner offices; and resident-run research studies focused on clinical concerns of their

TABLE V
PRIMARY CARE GRADUATES: NUMBER OF PHYSICIANS WHO CURRENTLY SPEND A CITED PERCENTAGE OF TIME IN VARIOUS PROFESSIONAL SETTINGS

	Professional Time Spent		
Setting	1–50%	51–99%	100%
Hospital-based ambulatory care clinic	9	2	0
Community-based ambulatory care clinic	6	7	3
Private practice	3	5	5
Teaching/precepting	15	1	0
Research	9	0	1
Administrative	17	0	0
Other	7	1	2

n = 35.

patients.[24–27] Most important is having residents work side-by-side with attending physicians who have chosen to spend their professional lives in care of the poor.

The dominant finding of our survey was that by the end of their residency program 60% of our graduates were very certain of their desire to practice primary care medicine as compared to 31% at the beginning.

What is the explanation for these results? In response to a question regarding the degree to which the residency training program provided adequate training in primary care internal medicine, 89% of our graduates responded "adequate" or "more than adequate." The majority also cited the multidisciplinary team approach in the delivery of patient care, the broad-based and varied patient population, the presence of primary care internist role models, and the academic (intellectual) content of the residency program as significant positive influencing factors in their desire to practice primary care medicine.

When asked what effect the residency, one in which we concentrate our attention on the poor, had on their subsequent professional life, 32 (91%) said it had a major or some impact. The majority continue to work with various underserved populations, similar to those they cared for as resident physicians during their training, and in similar settings as well (Tables IV and V).

Our findings are subject to several limitations. Although they

TABLE VI
CAREER OUTCOMES: COMPARISON OF SIX STUDIES

Study (Pub. date)	Tool (Location)	Dates	Response Rates	Subject Number*	Percentage of respondents practicing traditional primary care medicine	
					Primary Care Track	Traditional Track
Wechsler et al.[31] (1978)	Survey: Former Internal Medicine, Pediatrics, and Obstetrics-Gynecology residents (Massachusetts)	1967–72	74%	435—IM 157—PED 42—OB-GYN	28%	
McPhee et al.[33] (1987)	Survey: Former Primary Care Internal Medicine residents at UC San Francisco	1974–85	90%	49—PC	89%	
Strelnick et al.[32] (1988)	Review of Residency Training Program in Social Medicine at Montefiore Medical Center (NY)	1970–88	100%	84—IM 61—PED 73—FP	71%	
Witzburg and Noble[29] (1988)	Survey: Former Primary Care and Traditional Internal Medicine Residents at Boston City Hospital (Massachusetts)	1974–83	84% 71%	34—PC 100—TD	81%	38%
Nobel et al.[30] (1992)	Review of Information Cohort study and 8-year follow-up of Primary Care Residency training programs (National)	1977–82	100%	13750—IM	72%	54%
Present study	Survey: Former Residents of the Primary Care Track of the Internal Medicine Program, St. Vincent's Hospital and Medical Center (NY)	1977–93	100%	35—PC	89%	

* IM, Internal Medicine; PED, Pediatrics; OBGYN, Obstetrics and Gynecology; PC, Primary Care; TD, Traditional; FP, Family Practice.

constitute 100% of our graduates through 1993, the number of residents surveyed (n = 35) is small. Also, our survey was retrospective and the time period out of training ranged from 3 to 18 years. More information about the influence of the residency program might have been gained if attitudes of a broader range of Internal Medicine residents at the beginning and on completion of

their training in both traditional and primary care track programs were compared.[28]

Other studies have considered the subsequent career choices of Internal Medicine program graduates (Table VI). Two of these compared outcomes of primary care track and traditional program graduates.[29,30] Others assessed either traditional internal medicine[31] or primary care[32–33] graduate careers, but did no comparison. Overall, there is consistent evidence that a high percentage of physicians who complete their training in primary care medicine remain at work in that field. Our study confirms this finding.

Lastly, we acknowledge that perhaps the decision to practice primary care internal medicine is already made prior to the start of residency[34] and is in fact the very reason why trainees chose the program. If we cannot take credit for their later career choices, we can at least claim that we did not confound their original interests in primary care.[35]

Conclusion

It is feasible to train physicians who continue to practice general internal medicine or in other closely related primary care fields. We believe that both the character and the content of a residency training program are significant influencing factors on future career choices. In this regard, the experience of the first 17 years of our primary care track internal medicine residency training program, which emphasizes community-based care of the underserved, is notable.

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